

CLAIMS

1. Organic fibre capable of being obtained, for example by extrusion, starting from a formulation comprising
 - 5 - from 10 to 99% by weight of the total weight of the formulation of at least one thermosetting resin (I),
 - from 1 to 80% by weight of the total weight of the formulation of a rheology-controlling agent (II) comprising, for example, at least one block copolymer chosen from copolymers comprising S-B-M, B-M and M-B-M
 - 10 blocks in which:
 - each block is connected to the other by means of a covalent bond or of one or more intermediate molecules connected to one of the blocks via a covalent bond and to the other block via another covalent bond,
 - 15 ➤ M is a polymer miscible with the thermosetting resin,
 - B is incompatible with the thermosetting resin and with the M block and its glass transition temperature T_g is lower than the operating temperature for the thermoset material,
 - S is incompatible with the thermosetting resin and the B block
 - 20 and its T_g or its melting point M.p. is greater than the T_g of B,
 - from 0 to 50% by weight of the total weight of the formulation of at least one material (III) chosen from thermoplastics, core-shell additives, functionalized elastomers, S-B copolymers and ATBN or CTBN reactive rubbers.
- 25 2. Fibre according to Claim 1, characterized in that the M block is chosen from poly(methyl methacrylate)s and copolymers comprising at least 20% by weight of methyl methacrylate.
- 30 3. Fibre according to Claim 1 or 2, characterized in that the M blocks of the block copolymers are composed of syndiotactic PMMA to at least 75%.
4. Fibre according to one of the preceding claims, characterized in that the M blocks of the block copolymers additionally comprise reactive

monomers, such as glycidyl methacrylate, tert-butyl methacrylate or acrylic acid.

5. Fibre according to one of the preceding claims, characterized in that
5 the Tg of the B blocks is less than 0°C and preferably less than -40°C.

6. Fibre according to Claim 5, characterized in that the B block is
chosen from poly(alkyl acrylate)s, such as poly(butyl acrylate),
poly(ethylhexyl acrylate) or poly(octyl acrylate), and polydienes.

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7. Fibre according to Claim 6, characterized in that the B block is a
1,4-polybutadiene.

8. Fibre according to Claim 5 or 6, characterized in that the dienes of
15 the B block are hydrogenated.

9. Fibre according to one of the preceding claims, characterized in that
the Tg or the M.p. of S is greater than 23°C and preferably greater than
50°C.

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10. Fibre according to Claim 9, characterized in that S is polystyrene.

11. Fibre according to one of the preceding claims, characterized in that
the weight-average molar mass of the block copolymers can be between
25 10 000 g/mol and 500 000 g/mol.

12. Fibre according to Claim 11, characterized in that the weight-
average molar mass of the block copolymers can be between 20 000 g/mol
and 200 000 g/mol.

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13. Fibre according to one of the preceding claims, characterized in that
the proportion of the agent (II) is from 10 to 60% for respectively 90 to 40%
of (I) and advantageously from 20 to 50% for respectively 80 to 50% of (I).

14. Fibre according to one of Claims 1 to 13, characterized in that the thermosetting resin is a thermosetting epoxy resin and a hardener.

5 15. Use of the fibre according to one of the preceding claims in the preparation of woven and knitted fabrics according to the process consisting in:

- weaving or knitting the fibres of Claims 1 to 14 with organic or inorganic reinforcing fibres,
- reacting the woven or knitted fabric under hot pressing in order
10 to form a composite material having all the characteristics of composites comprising a thermoset matrix.

16. Use according to Claim 15, characterized in that the reinforcing fibres are chosen from fibres made of glass, of carbon or of any similar
15 organic or inorganic material.

17. Woven and knitted fabrics obtained according to Claim 15 or 16.